



June 8, 2020

Mr. Todd Davis
EPA Site Assessment Manager
U.S. Environmental Protection Agency, Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219

Subject: Pre-CERCLA Screening Report
120 Welch Avenue Former Dry Cleaner, Ames, Iowa
U.S. EPA Region 7 START 5, Contract No. 68HE0719D0001
Task Order No. 19F0086.005
Task Monitor: Todd Davis, EPA Iowa Site Assessment Manager

Dear Mr. Davis:

Tetra Tech, Inc. is submitting the attached Pre-Comprehensive Environmental Response, Compensation, and Liability Act Screening (PCS) report regarding the 120 Welch Avenue Former Dry Cleaner site in Ames, Iowa. If you have any questions or comments, please call me at (816) 412-1756.

Sincerely,

A handwritten signature in black ink, appearing to read 'Zach Usher'.

Zach Usher
START Project Manager

A handwritten signature in blue ink, appearing to read 'Ted Faile'.

Ted Faile, PG, CHMM
START Program Manager

Enclosures

PRE-CERCLA SCREENING REPORT
120 WELCH AVENUE FORMER DRY CLEANER
AMES, IOWA

Superfund Technical Assessment and Response Team (START) 5 Contract
Contract No. 68HE0719D0001, Task Order 19F0086.005

Prepared For:

U.S. Environmental Protection Agency
Region 7
Superfund Division
11201 Renner Boulevard
Lenexa, Kansas 66219

June 8, 2020

Prepared By:

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1.0 INTRODUCTION

The U.S. Environmental Protection Agency (EPA) Region 7 Superfund Division tasked the Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) to assist with a Pre-Comprehensive Environmental Response, Compensation, and Liability Act Screening (PCS) at 120 Welch Avenue Former Dry Cleaner site (the site) in Ames, Iowa. This PCS, in response to public concern regarding possible threats to health and environment posed by the site, was conducted to determine if further Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) response would be warranted.

Tetra Tech's tasks included (1) review of existing and relevant documents associated with the site, and (2) completion of a PCS Checklist/Decision Form. Zach Usher was the START Project Manager, and the EPA Region 7 Iowa Site Assessment Manager was Todd Davis.

2.0 SITE LOCATION AND BACKGROUND

Section 2.0 describes the site and its location, reviews site history, identifies current land use, and discusses geology and hydrology in the site area.

2.1 SITE LOCATION AND DESCRIPTION

The City of Ames (City) is on the west bank of the Skunk River in Story County, Iowa (see Appendix A, Figure 1), and according to the 2010 census, had a population of 58,965 (U.S. Census Bureau 2020). The City supplies potable water to the population; however, those residing outside of city limits obtain their water from private wells. The City has an economy primarily consisting of education, farming, healthcare, and retail (City 2020). The City appears on 7.5-minute topographic quadrangle maps of East Ames, Iowa and West Ames, Iowa (U.S. Geological Survey [USGS] 2018a, b).

The approximately 0.04-acre site is at 120 Welch Avenue, within the campus town district of the City just south of Iowa State University (see Appendix A, Figure 2). A two-story building on the site was built in 1931 and houses a restaurant. Commercial businesses, some with upper level apartments, surround the site. The buildings north and south of the site are both mixed use commercial and residential, and a condominium building is to the east. On the west side of Welch Avenue are generally single-story commercial shops. Global Positioning System (GPS) coordinates at the approximate center of the site are 42.02198 degrees (°) north latitude and 93.64993° west longitude.

2.2 SITE HISTORY

NewspaperArchive lists Ideal Cleaners as operating at the listed address (Newspaper Archive 2020) from approximately 1935 until 1968. A clothing store and art store occupied the site from 1969 until at least 2000. Photographs from Story County Assessor records viewed on-line showed likely occupation of the site since at least as early as 2000 by bars and restaurants (Story County, Iowa 2020). The site is currently occupied by Wok N Roll restaurant.

Tetrachloroethene (PCE) and Its Use at the Site

The dry cleaner at the site likely used PCE, also referred to as perchloroethylene or “Perc,” as did many dry cleaning operations during the mid-late 1900s following its introduction as a dry cleaning solvent in 1934. By 1948, PCE had replaced carbon tetrachloride as the major chlorinated dry cleaning solvent used in the United States (petroleum solvents still dominated overall). By 1962, dry cleaning operations accounted for 90 percent of the PCE used in the United States (State Coalition for Remediation of

Drycleaners 2007). At one time, PCE had been mixed with grain protectants and certain liquid grain fumigants, but this was no longer approved by 1980 (Meister Publishing Company 1980). Currently, PCE is used as a degreaser for metal parts (Agency for Toxic Substances and Disease Registry 2020).

PCE is a chlorinated solvent with an ether-like odor. A likely carcinogen, it degrades to trichloroethene (TCE) (a known carcinogen), which degrades to the *cis* and *trans* isomers of 1,2-dichloroethene (DCE), and to 1,1-DCE. These daughter products eventually degrade to vinyl chloride. PCE has low to moderate mobility in soil and may leach slowly to groundwater. Its solubility in groundwater is slight (0.15 grams per liter [g/L]) at 25 degrees Celsius (°C), and its specific gravity is 1.62 (Centers for Disease Control and Prevention 2020). PCE tends to accumulate at greater depths with increasing distance from the source area.

2.3 CURRENT LAND USE

According to Story County property records, Anfu Wang owns the site. The Wok N Roll restaurant operates on the site.

2.4 GEOLOGY AND HYDROLOGY

Story County is in central Iowa within the Central Lowlands physiographic province. Wisconsin-aged glaciation occurred in central Iowa during three major advances across an area referred to as the Des Moines Lobe. Western Story County consists of glacial till comprised of silt loam and sandy loam that unconformably overlies Pennsylvanian and Mississippian bedrock. The irregular bedrock surface topography varies considerably and ranges in elevation from 700 to 950 feet above mean sea level (msl). Regional Pleistocene deposits vary in thickness from 100 to 300 feet, depending on the bedrock surface elevation (University of Iowa 2020).

Soils in the study area are composed of the Clarion, Webster, and Nicollet Series—well drained, poorly drained, and somewhat poorly drained, loamy soils formed in glacial till and local alluvium from till. In lower-lying areas, soils belong to the Canisteo-Okoboji-Nicollet association—somewhat poorly drained to very poorly drained, loamy and silty soils formed in glacial till or local alluvium from till (U.S. Department of Agriculture [USDA] 1984).

The City obtains its water supply from the Ames Aquifer, composed of confined glacial outwash deposits and unconfined surficial alluvial deposits. The glacial outwash deposits consist of sand and gravel, and are part of the Noah Creek Formation present throughout the area along the bedrock channel fill valleys. The glacial outwash deposits are overlain by glacial till in the northern and western portion of the City. The glacial till is present from near ground surface to approximately 70 feet below ground surface (bgs).

Depending on bedrock elevation, the outwash deposits are underlain by glacial till or Mississippian-aged bedrock, and reach a thickness of more than 100 feet. Limestone bedrock is present below the outwash deposits at depths ranging from 130 to 140 feet bgs. The City's western well field draws its water from the glacial outwash deposits.

The City has 10 active public wells completed in the Ames Alluvial Aquifer well field within the Skunk River floodplain in the southeastern portion of the City. In addition, 12 active public wells are completed in the Buried Sand and Gravel Aquifer that underlies most of the City (Iowa Department of Natural Resources [IDNR] 2020). Depths of wells in these areas range from 76 to 147 feet bgs. Groundwater depth ranges from 8 to 49 feet bgs. Local groundwater flow may also be influenced by pumping of municipal wells within the City.

3.0 PATHWAY EVALUATION

This section describes migration pathways of groundwater, surface water, soil exposure and subsurface intrusion, and air, and identifies obvious potential human and ecological targets.

3.1 GROUNDWATER MIGRATION PATHWAY

The City is served by a blended system of 22 active water supply wells in two well fields, all of which are completed into the surficial aquifer at depths ranging from 76 to 147 feet bgs (IDNR 2020). One well field consists of 12 wells in the central city area, as well as the area around Iowa State University campus; the other well field consists of 10 wells within the Skunk River floodplain in the southeastern area of the City. Two municipal wells lie within 1 mile of the site (Appendix A, Figure 3). The wells appear to be downgradient of the site. The site is included in the 10-year capture zone for the Buried Sand and Gravel well field (IDNR 2020). Groundwater flow in the Ames area is generally southeast toward the Skunk River.

Groundwater sampling was not included with the PCS. Without environmental sampling, a definitive assessment of likelihood of a release cannot occur. However, dry cleaner operations occurred at the site for at least 23 years, and spills of dry cleaning fluids were common during the dry cleaning process. The impact of a potential spill would be significant because groundwater is relatively shallow in the City, and two municipal wells are within 1 mile of the site (Appendix A, Figure 3).

3.2 SURFACE WATER MIGRATION PATHWAY

Review of the Ames, Iowa quadrangle topographic map indicated that runoff from the site proceeds north toward College Creek, following the general topographic gradient. Most runoff would likely be captured by stormwater inlets along Welch Avenue, just north of the site. According to the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) System, no wetlands are present on the site (USFWS 2020).

Surface water sampling was not included with the PCS. However, a release to surface water is unlikely because the site is almost entirely covered with structures and a parking lot, dry cleaners do not currently operate at the site, and previous contamination at the surface would have volatilized.

3.3 SOIL EXPOSURE AND SUBSURFACE INTRUSION PATHWAY

Soil sampling was not included with the PCS. A dry cleaner operated at the site for at least 23 years, and spills of dry cleaning fluids were common during the dry cleaning process. A contaminant release would likely pose a vapor intrusion concern at downgradient residences and businesses. The site is surrounded by commercial buildings, some with upper level apartments, and condominiums. Apartments dominate the area about one block farther south, with the closest single-family residence approximately 700 feet southwest of the site. Potential targets associated with the subsurface intrusion component of this pathway include workers in commercial businesses, people living in apartments collocated with the businesses, and residential homes. Without environmental sampling, a definitive assessment of likelihood of a release cannot occur.

3.4 AIR MIGRATION PATHWAY

Air sampling was not included with the PCS. A release to ambient air is unlikely because contaminants in surface soil would be covered by buildings or the parking lot.

3.5 POTENTIAL HUMAN AND ECOLOGICAL TARGETS

Facility users include on-site workers, customers, and construction workers. Customers of the Ames public water supply are also potential targets if a release has occurred at the site. Ecological targets exist approximately 1 mile to the east at Squaw Creek. No release has been identified at the site; however, the long history of dry cleaning operations there poses a potential threat to targets. The site PCS Checklist/Decision Form is in Appendix B.

4.0 SUMMARY AND CONCLUSIONS

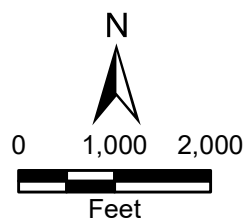
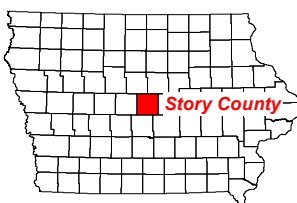
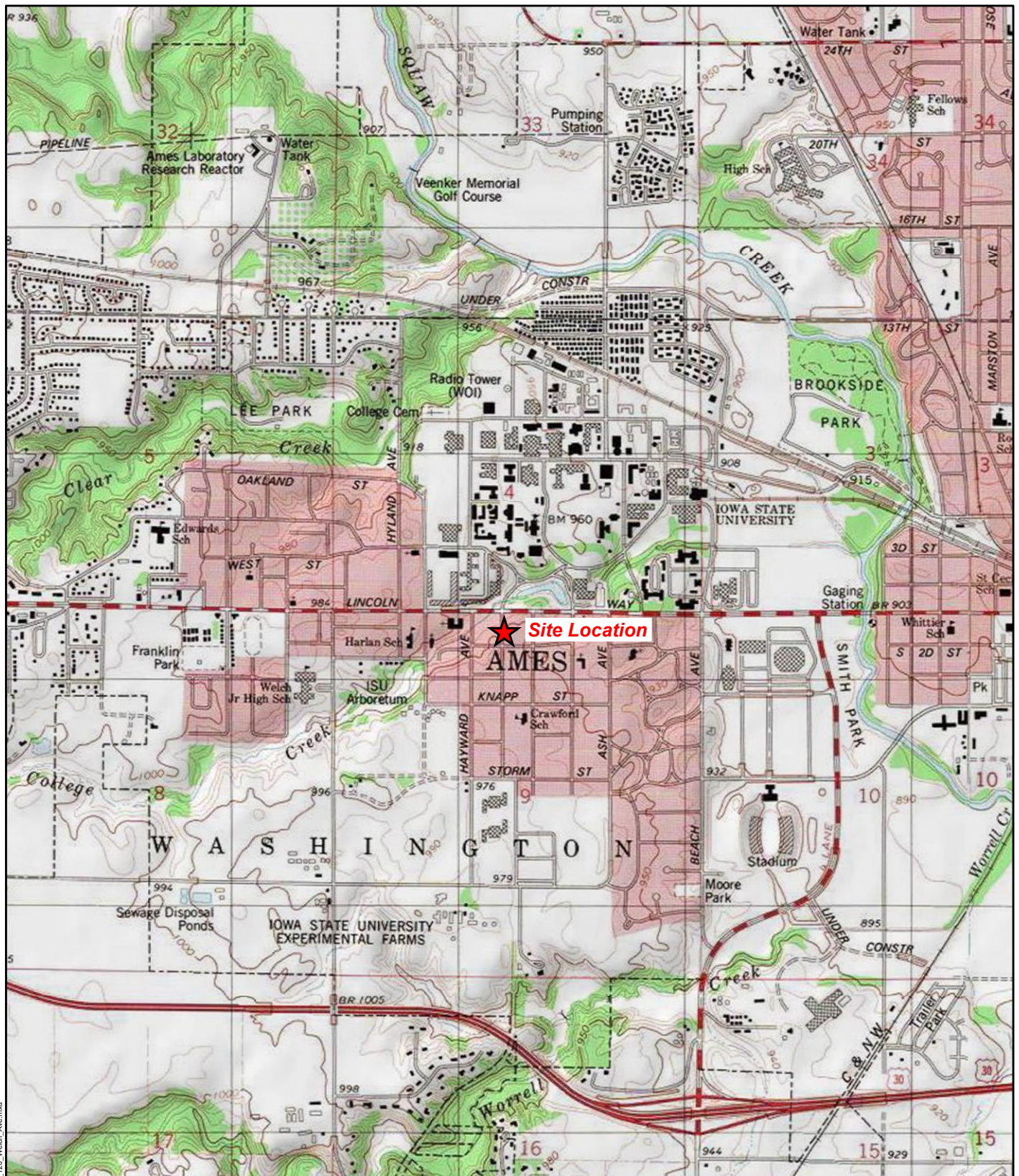
Objectives of the PCS were to: (1) review existing and relevant documents associated with the site, and (2) complete a PCS Checklist/Decision Form. A release of volatile organic compounds (VOC) (probably chlorinated solvents) to soil and groundwater likely has occurred, given the long history of dry cleaning operations at the site. No definitive exposure risk to humans or endangered or threatened species has yet been identified during assessment activities, as no environmental sampling has occurred. Further CERCLA assessment is warranted at the site.

5.0 REFERENCES

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- USGS. 2018b. 7.5-minute topographic map Ames West, Iowa. Accessed on April 28, 2020.

APPENDIX A

FIGURES



120 Welch Avenue
Former Dry Cleaner
Ames, Iowa

Figure 1
Site Location Map



Source: Ames East, Iowa USGS 7.5 Minute Topo Quad, 1975;
Ames West, Iowa USGS 7.5 Minute Topo Quad, 1975

Date: 5/14/2020

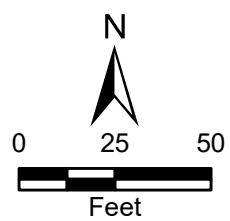
Drawn By: Nick Wiederholt

Project No: X903019F0086.005



Legend

Former dry cleaner facility



120 Welch Avenue
Former Dry Cleaner
Ames, Iowa





Figure 2
Site Layout Map

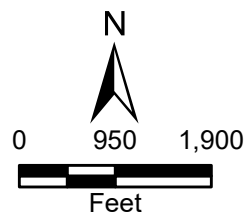




C:\GIS\Workspaces\XG09030\0086005\Project\Map\Figure3_120_Welch_Ave.mxd

Legend

-  Former dry cleaner facility
-  Municipal well location
-  Stream/river
-  1-mile radius ring



Source: Esri, ArcGIS Online, World Imagery, 2017; Esri, Data Maps, Named Streams and Rivers, 2007; Iowa Geodata, The Iowa Department of Natural Resources, All Registered Wells in the State of Iowa, 2019

120 Welch Avenue
Former Dry Cleaner
Ames, Iowa

Figure 3
Municipal Well Map



APPENDIX B

PRE-CERCLA SCREENING CHECKLIST/DECISION FORM

Pre-CERCLA Screening Checklist/Decision Form

This form is used in conjunction with a site map and any additional information required by the EPA Region to document completion of a Pre-CERCLA Screening (PCS). The form includes a decision on whether a site should be added to the Superfund program's active site inventory for further investigation. This checklist replaces Attachment A in the December 2016 PCS Guidance document. A current version of the PCS checklist and additional information is available at: <https://www.epa.gov/superfund/pre-cercla-screening>.

Region:	State/Territory:	Tribe:	EPA ID No. (If Available)	
Site Name:				
Other Site Name(s):				
Site Location:				
(Street)				
Congressional District	(City)	(State/Terr.)	(County)	(Zip+4)
(No Zip Available)				
If no street address is available:				
(Township-Range)				
(Section)				
Checklist Preparer:				
(Name / Title)			(Date)	
(Organization)			(Phone)	
(Street)			e-Mail	
(City)			(State/Terr.)	(County)
			(Zip+4)	
Site Contact Info/Mailing Address:				
CERCLA 105d Petition for Preliminary Assessment?			If Yes, Petition Date (mm/dd/yyyy):	
RCRA Subtitle C Site Status: Is site in RCRA Info?			If Yes, RCRA Info Handler ID #:	
Ownership Type:			Additional RCRA Info ID #(s):	
Site Type:			State ID #(s):	
Site Sub-Type:			Other ID #(s):	
Federal Facility?			Federal Facility Owner:	
Formerly Used Defense Site (FUDS)?				
Federal Facility Docket?			If Yes, FF Docket Listing Date (mm/dd/yyyy):	
Federal Facility Docket Reporting Mechanism:				
Native American Interest?			If Yes, list Tribe:	
			Additional Tribe (s):	
			Additional Tribe (s):	

Site Description

Use this section to briefly describe site background and conditions if known or (easily) available, such as: operational history; physical setting and land use; site surface description, soils, geology and hydrogeology; source and waste characteristics; hazardous substances/contaminants of concern; historical releases, previous investigations and cleanup activities; previous regulatory actions, including permitting and enforcement actions; institutional controls; and community interest.

Geospatial Information

Latitude:

Longitude:

Decimal Degree North (e.g., 38.859156)

Decimal Degree West (e.g., 77.036783)

Provide 4 significant digits at a minimum, more if your collection method generates them.

Except for certain territories in the Pacific Ocean, all sites in U.S. states and territories are located within the northern and western hemispheres and will have a positive latitude sign and negative longitude sign. Coordinate signs displayed above are based on the State/Territory entry on page A-1. Geospatial data tips from the PCS Guidance document are available [here](#).

Point Description: Select the option below that best represents the site point for future reference and to distinguish it from any nearby sites. See additional information [here](#).

- Geocoded (address-matched) Site Address
- Site Entrance (approximate center of curb-cut)
- Approximate Center of Site
- Other Distinguishing Site Feature (briefly describe):

Point Collection Method: Check the method used to collect the coordinates above and enter the date of collection. See additional information [here](#).

- Online Map Interpolation
- GPS (handheld, smartphone, other device or technology with accuracy range < 25 meters)
- GPS Other (accuracy range is ≥ 25 meters or unspecified)
- Address Matching: Urban
- Address Matching: Rural
- Other Method (briefly describe below):

POINT-SELECTION CONSIDERATIONS

- Often the best point is a feature associated with the environmental release or that identifies the site visually.
- Use the curb cut of the entrance to the site if there is a clear primary entrance and it is a good identifier for the overall location.
- The approximate center of the site (a guess at the centroid) is useful for large-area sites or where there are no appropriate distinguishing features.
- Use the geocoded address if that is the only or best option available, but if possible use something more representative for sites larger than 50 acres.

Collection Date (mm/dd/yyyy):

Complete this checklist to help determine if a site should be added to the Superfund Active site inventory. See Section 3.6 of the PCS guidance for additional information.	YES	NO	Unknown
1. An initial search for the site in EPA's Superfund active, archive and non-site inventories should be performed prior to starting a PCS. Is this a new site that does not already exist in these site inventories?			
2. Is there evidence of an actual release or a potential to release?			
3. Are there possible targets that could be impacted by a release of contamination at the site?			
4. Is there documentation indicating that a target has been exposed to a hazardous substance released from the site?			
5. Is the release of a naturally occurring substance in its unaltered form, or is it altered solely through naturally occurring processes or phenomena, from a location where it is naturally found?			
6. Is the release from products which are part of the structure of, and result in exposure within, residential buildings or business or community structures?			
7. If there has been a release into a public or private drinking water supply, is it due to deterioration of the system through ordinary use?			
8. Are the hazardous substances possibly released at the site, or is the release itself, excluded from being addressed under CERCLA?			
9. Is the site being addressed under RCRA corrective action or by the Nuclear Regulatory Commission?			
10. Is another federal, state, tribe or local government environmental cleanup program other than site assessment actively involved with the site (e.g., state voluntary cleanup program)?			
11. Is there sufficient documentation or evidence that demonstrates there is no likelihood of a significant release that could cause adverse environmental or human health impacts?			
12. Are there other site-specific situations or factors that warrant further CERCLA remedial/integrated assessment or response?			

Preparer's Recommendation:**Add** site to the Superfund Active site inventory.**Do not add** site to the Superfund Active site inventory.**Please explain recommendation below:****PCS Summary and Decision Rationale**

Use this section to summarize PCS findings and support the decision to add or not add the site to the Superfund active site inventory for further investigation. Information does not need to be specific but, where known, can include key factors such as source and waste characteristics (e.g., drums, contaminated soil); evidence of release or potential release; threatened targets (e.g., drinking water wells); key sampling results (if available); CERCLA eligibility; involvement of other cleanup programs; and other supporting factors. Attach additional pages as necessary.

Checklist Preparer Name**Checklist Preparer Organization****Date****EPA Regional Review and Pre-CERCLA Screening Decision****Add site to the Superfund active site inventory for completion of a:**

- Standard/full preliminary assessment (PA)
- Abbreviated preliminary assessment (APA)
- Combined preliminary assessment/site inspection (PA/SI)
- Integrated removal assessment and preliminary assessment
- Integrated removal assessment and combined PA/SI
- Other:

Do not add site to the Superfund active site inventory. Site is:

- Not a valid site or incident
- Being addressed by EPA's removal program
- Being addressed by a state cleanup program
- Being addressed by a tribal cleanup program
- Being addressed under the Resource Conservation and Recovery Act
- Being addressed by the Nuclear Regulatory Commission
- Other:

Optional- Print name of EPA Site Assessor making this decision:

EPA Regional Approval: (Enter Date and then click this box to initiate digital signature stamp)

Date

Site Description

(All text as entered on page A-2)

PCS Summary and Decision Rationale*(All text as entered on page A-4)*